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IMPACT OF INTERVENTION TO PROMOTE MATURATION ON SURVIVAL OF ARTERIOVENOUS FISTULAS AND GRAFTS

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A previous study found decreased cumulative survival of AVF that required intervention (interv) to achieve maturation (Lee, CJASN 6: 575-581, 2011). We compared the cumulative survival of AVF and AVG that did or did not require interv to achieve maturation.

We retrospectively queried a prospective, computerized access database to identify 599 patients who had a new access (289 AVF, 310 AVG) placed after initiation of hemodialysis during a 6-year period (1/1/2006 – 12/31/2011) that was successfully used for HD. Cum access survival was calculated from first successful cannulation to permanent access failure. Patient demographics and co-morbidities were extracted from the electronic medical record.

AVF were more likely than AVG to require interv prior to maturation (50.5 vs 17.7%; OR 4.74, 95% CI 3.26-6.86; p<0.001). The need for AVF interv to achieve maturation was associated with female sex (p<0.001) and diabetes (p=0.02). The need for AVG interv to achieve maturation was associated with CAD, PVD, and lack of HTN (each p<0.05). Interv to achieve maturation were associated with shortened cum survival of both AVF and AVG (Table). Among accesses that did not require interv to achieve maturation, cum survival was similar for AVF and AVG. Cum access survival was shorter for AVF requiring interv than for AVG not requiring interv to achieve maturation.

Comparison	HR	95% CI	p-value
AVF-1 vs AVF-0	1.84	1.30-2.60	<0.001
AVG-1 vs AVG-0	1.98	1.52-4.02	<0.001
AVG-0 vs AVF-0	1.28	0.91-1.78	0.16
AVF-1 vs AVG-0	1.45	1.08-2.01	0.01

AVF-0 and AVG-0 =acc w/o interv; AVF-1 and AVG-1=acc w/ interv.

In summary, cum survival in the 82% of AVG not requiring interv to achieve maturation was similar or superior to that of AVF. These observations may have important implications for access choice.

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PNEUMATOSIS INTESTINALIS IN A PERITONEAL DIALYSIS PATIENT A RARE COMPLICATION

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Pneumatosis intestinalis (PI) indicates the infiltration of gas within the walls of small or large intestine. PI is a clinical finding with diverse etiology and severity ranges from incidental finding to fatal complications. Pathogenesis is still poorly understood. We report a case of PI in a peritoneal dialysis (PD) patient which was postulated to be a complication of Peritonitis.

35 year old Middle eastern male with h/o end stage renal failure due to reflux nephropathy, initially on hemodialysis (HD) for 12 years and then switched to PD as he ran out of options for vascular access and had been doing well on PD (continuous cycling peritoneal dialysis) for 6 year. He was initially admitted and treated for peritonitis due to methicillin resistant staphylococcus aureus (MRSA), that was treated with intra peritoneal vancomycin. Patient post discharge had poor appetite followed by nausea, vomiting and generalized weakness. He was readmitted 2 days later with tachycardia, leucocytosis and hypotension which improved with fluid bolus. Repeat fluid cultures were negative, abdominal computerized tomography scan showed diffuse small and large bowel wall thickening with pneumatosis involving small bowel mainly the jejunum with no obvious ischemic insult to the intestine or mesentery. Infectious diseases and general surgery consults were obtained. Multidisciplinary approach including patient preference decided on conservative approach and continuing antibiotics. Bowel rest with change of modality to HD was also recommended patient declined. Hence PD with IP antibiotics was continued. His clinical symptoms and laboratory parameters continued to improve with complete resolution of symptoms without any other complications.

Association of pneumatosis intestinalis with infection, bowel infarction or medical procedures has been described. There is scarcity of literature pertaining to this finding in PD peritonitis patients. Majority of the time PI in PD patients has very high mortality Our Pt did well with convervative management and very close monitoring. PD catheter was retained with ongoing antibiotics

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CHITOSAN; A NOVEL SALIVARY PHOSPHORUS BINDER

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Hyperphosphatemia is associated with increased cardiovascular mortality in patients with end stage renal disease (ESRD). Despite treatment, only 50% of patients achieve recommended serum phosphorous (PO4) levels. Serum PO4 level correlates linearly with salivary PO4 content. The use of salivary phosphate binder during periods of fasting can improve the treatment of hyperphosphatemia.

A 46 year old lady presented for routine monthly follow up in peritoneal dialysis (PD) clinic. She developed ESRD due to chronic glomerulonephritis 3 years ago. Her clearance was excellent (Kt/V 2.2) on continuous ambulatory peritoneal dialysis. She was asymptomatic but physical examination showed bilateral conjunctival congestion. Her serum calcium, PO4 and intact parathyroid hormone (iPTH) levels were 12 mg/dl, 7.0 mg/dl and 1117 pg/ml respectively. She had history of partial parathyroidectomy 2 years ago but subsequently developed secondary hyperparathyroidism. She has been non compliant with low PO4 diet and refused to take all types of phosphate binders and sensipar due to unclear allergic reactions. She presented again one month later for routine follow up while maintained on same prescription of PD. Her laboratory data showed serum calcium of 12.1 mg/dl, while serum PO4 and iPTH levels improved to 6.7 mg/dl and 871 pg/ml respectively. On further questioning it was revealed that she started taking herbal capsules “Chitosan” three weeks ago for weight loss. She denied compliance with low phosphorous diet and phosphate binders.

Chitosan is an abundant natural polymer that is produced by the deacetylation of chitin obtained from the crustacean shells. Its structure is similar to cellulose and is not cleaved by the digestive enzymes. It has been used as a dietary fiber for weight reduction and hyperlipidemia. In HD patients, with salivary PO4 content and average daily salivary production of 500 ml, a conservative estimate of at least 600 mg of Bioavailable phosphate daily entering the gastrointestinal fluid could be proposed. Chitosan is an active salivary phosphorous binder especially when chewed as a gum for prolonged time periods. Double blind, controlled trials are required to determine its precise efficacy and side effect profile.

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HEMORRHAGIC COLITIS DUE TO CYTOMEGALOVIRUS REQUIRING HEMICOLECTOMY IN A KIDNEY TRANSPLANT RECIPIENT: Mujtaba Hasnain, Komal Hussain, Biplap Saha, Ryan Goldberg, Saint Barnabas Medical Center, Livingston NJ

Cytomegalovirus (CMV) is one of the most common viral infections in post-transplant immunocompromised patients. It can present in a wide variety of ways including colitis, gastritis, hepatitis and leukopenia. We present a novel case of severe hemorrhagic colitis due to CMV infection.

71 year old lady with medical history of end stage renal disease due to hypertension received a living related kidney transplant. She received thymoglobulin induction at dose of 6mg/kg and her maintenance immunosuppression consisted of tacrolimus, prednisone and mycophenolic acid. She received valganciclovir for 3 months for CMV prophylaxis as both donor and recipient were positive for serum CMV IgG antibodies. She presented with melena and fevers 4 months post transplant. She developed hematochezia and went into hemorrhagic shock immediately after presentation and required multiple transfusions. Bleeding scitinography showed active bleeding in the region of the distal small bowel. Coiled embolization failed to control the bleeding and she underwent emergent right sided hemicolectomy. Her serum CMV virus result was 3,900,000 copies/ml. She was treated with valganciclovir and mycophenolic acid was stopped. Pathology report of the resected segment of colon showed severe ulceration of entire colon with cells containing viral cytopathic effects, confirmed by immunohistochemistry, as CMV.

Gastrointestinal CMV disease is an increasingly recognized clinical problem in immunocompromised patients. Its presentation can be very mild diarrhea, nausea and vomiting which is common, to very severe colitis which is rare. Our patient developed hemorrhagic shock due to severe colitis and ultimately required hemicolectomy. If kidney transplant recipient presents with a gastrointestinal bleed, CMV disease should be considered immediately. Timely diagnosis and treatment is extremely important as it can have fatal consequences.